

CENTRAL INTELLIGENCE AGENCY

## REPORT

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## IMPROVING THE TECHNICAL MEANS OF RADIO COMMUNICATION

There was an appreciable number of technician-operators in the Radio Center, but lack of theoretical knowledge prevented the correct use of equipment. A course along the lines of a technical-school program was

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initiated for these workers. The better engineers of the Radio Center (Tchurbenko, Tonkonogiy, and others) conducted the course. These measures markedly improved the technical use of radio equipment.

Serious attention was directed to the correct organization of procedures. The whole operation of processing telegrams was reviewed, and the recording of the message tape immediately after reception was secured. Control periods for the handling of telegrams within the office were introduced for each worker. Strict supervision for the observation of these response periods was established. Accounting cards were introduced, upon which were entered the time expended in processing telegrams and the productivity of labor. Indeed, we had begun to introduce a few of these measures in 1945, and by the beginning of 1946 the amount of delay had already been cut in half. Delays attributable to the workers were immediately eliminated. Telegrams requesting information were handled with little delay.

In the mid-1946, the basic communications system of Odessa was converted to teletype apparatus. This resulted in a rapid exchange of messages. However, automatic transmission did not surpass the rate of manual operation, despite the high technical capabilities of the equipment, i.e., in spite of the preliminary processing of the tape and its automatic transmission.

By conducting time studies, it was established that much time was lost (and consequently the actual exploitable rate of exchange was lowered) on account of the transition from automatic to manual operation for the purpose of making inquiries and replies, caused by deterioration in message-transmission or by other operational causes. The poor qualification of those working on teletype and ignorance of the service code also exerted a negative influence upon the rate of transmission. The latter led to lengthy transmissions of conversations in plain text, instead of the briefer coded text.

Having clarified the reasons for this reduction in the rate of turnover, we discussed them in the Collective. A production course was organized for backward workers, and socialistic competition for increasing the rate of turnover was developed. The observations, conclusions, and measures adopted in the discussions were communicated to the correspondents of the Odessa Radio Center. An immediate consequence was a slight increase in the rate of turnover of messages. When teletype sets were first installed, the rate of turnover did not exceed 50 telegrams per hour, but at the end of 1946 it reached 85 telegrams per hour.

In 1947, after receiving Order No 60, the endeavor to increase the exchange rate was continued with renewed vigor. Manual operation in telegraphy was reduced to a minimum. Now all inquiries and requests are put on the tape and sent through the transmitter. Knowledge of the service code was increased. This reduced the expenditure of time in the transmission of messages. A lever was installed on the transmitting equipment. By pushing the lever, a signal (ring) is sent to the correspondent, thus calling attention to defects in his transmission.

Now, instead of stopping the transmitter for service conversations (for example, "repeat telegram from scratch," "give me N Sh," "stop transmission," etc.) a previously agreed upon number of rings is sent. This permits the correction of defects in the transmission of the correspondent without cutting off.

Competing for an increase in the exchange rate, many workers in the system have systematically overfulfilled norms by 150-200 percent.

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Stakhanovite methods of labor were introduced into the Radio Center. Norms are now exceeded from 160 to 230 percent. Consequently, when the net is 100 percent loaded, the rate of exchange of messages amounts to 160 and more telegrams per hour.

There were formerly a great number of technical stoppages at our Radio Center due to unfamiliarity with the new equipment, lack of experience in its use, unsatisfactory preventive maintenance, and sometimes the lack of spare parts.

We organized a general inspection of equipment, and thus exposed many defects. Each instance of technical failure was carefully studied by the chief engineer of the Center. High requirements were placed on the service personnel. A strict system of preventive maintenance was set up. During each shift, every worker was charged with the uninterrupted operation of the equipment charged to him in socialistic competition.

Efficiency studies by the engineers and technicians assisted in the struggle against technical stoppages. For example, the exciters caused a large number of the failures of the radiotelegraphic transmitters. Specialists of the PM group [young Stakhanovite workers] under the direction of Engineer-Stakhanovite Greben' constructed two new exciters, using Solntsev's system in series. Placed in the transmitter, these exciters proved to be of high quality and eliminated technical failures.

Our engineers set up an audio amplifier-rectifier and a control-instrument panel for our Radio Bureau. Other efficient measures were also introduced.

Lack of even a few spare parts and ignorance of the details of the equipment greatly contributed to the length of technical stoppages. In 1947, a repair shop with various machine tools was set up, thus permitting the local manufacture of many small parts and the realization of our specialists' technical ideas.

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